

AS

Notice of Allowability	Application No.	Applicant(s)	
	10/008,431	SCHMOYER, THOMAS E.	
	Examiner	Art Unit	
	Jeffrie R. Lund	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 2/9/2004.
2. ☒ The allowed claim(s) is/are 1,4-7,9,10,13 and 15-20.
3. ☒ The drawings filed on 13 November 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|--|--|

Jeffrie R. Lund
 Primary Examiner
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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Lynn E. Cargill on March 5, 2004.

The application has been amended as follows:

In claim 1 line 9 "the sulfonating" has been changed to --a sulfur-containing--;
and line 13 "form a" has been changed to --form the--.

In claim 10 line 12 "the sulfonating" has been changed to --a sulfur-containing--.

Claim 18 has been amended as follows:

18. (currently amended) An apparatus for applying a sulfonating treatment or surface modification onto the surface of polymeric articles, comprising:

~~a supply of sulfur-containing sulfonating gas for effecting such a sulfonation treatment;~~

a catalytic converter gas generator for the on-site production of a sulfur-containing gas from a sulfur-containing compound feedstock selected from the group consisting of raw sulfur, processed sulfur, sulfur dioxide, liquid sulfur dioxide, sulfuric acid and mixtures thereof, said on-site production of the sulfur-containing gas also being adapted to replenish the sulfur mole percentage concentration in the spent sulfur-containing gas to a level of between about 1%

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to about 20%, based upon the volume of the sulfur-containing gas being generated;

~~a multi-port sulfur-containing sulfonating gas delivery system having individual ports for connecting to a plurality of individual polymeric articles;~~

~~a plurality of means for introducing a the sulfur-containing sulfonating gas onto the surface of individual polymeric articles such that a treatment is formed on the surface of the article, said sulfonating gas being comprised of dry air and a sulfur-containing gas, said dry air being at an elevated temperature of between about 15°C and 70°C, and said sulfur-containing gas including a mole percentage of elemental sulfur within the sulfur-containing gas of from about 1% to about 20%, said elemental sulfur being sourced from a chemical feedstock selected from the group consisting of raw sulfur, processed sulfur, sulfur dioxide, liquid sulfur dioxide, sulfuric acid and mixtures thereof, whereby some of the sulfur in the sulfur-containing gas is consumed to form the treatment layer;~~

a multi-port sulfonating gas delivery system having individual ports for connecting to a plurality of individual polymeric articles for introducing a sulfonating gas onto the surface of individual polymeric articles such that a treatment layer is formed on the surface of the article, said sulfonating gas being comprised of dry air and the sulfur-containing gas, said dry air being at an elevated temperature of between about 15°C and 70°C, whereby some of the sulfur in the sulfur-containing gas is consumed to form the treatment layer;

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a manifold means for containing and transporting the sulfonating gas between the multiple ports of the gas delivery system so that the unused sulfonating gas can be recycled and delivered to additional polymeric articles for more of the elemental sulfur to be consumed by forming a the treatment layer on more of the articles;

~~a means for exhausting the sulfonating gas;~~

a pump for supplying the sulfonating gas to the gas delivery system and exhausting the sulfonating gas via the manifold;

a means for introducing a neutralizing agent onto the surface of the polymeric articles, said neutralizing agent being selected from the group consisting of ammonia, calcium, aluminum and any positively charged ion-containing fluid and mixtures and solutions thereof; and

~~a catalytic converter gas generator for the on-site production of sulfur-containing gas from a sulfur-containing compound feedstock selected from the group consisting of raw sulfur, processed sulfur, sulfur dioxide, liquid sulfur dioxide, sulfuric acid and mixtures thereof, said on-site production of the sulfur-containing gas being adapted to replenish the sulfur mole percentage concentration in the spent sulfur-containing gas to a level of between about 1% to about 20%, based upon the volume of the sulfur-containing gas being generated,~~

whereby an effective concentration of sulfur-containing compound is present in the sulfonating gas and may be reused and recycled for sulfonating additional articles.

Non-elected claims 22-25, 27-34, and 36-45 have been canceled.

2. The following is an examiner's statement of reasons for allowance: the apparatus as claimed in claims 1, 10, and 18, specifically, all the claimed components forming a single sulfonation system and more specifically, the location of the pump after the generator and prior to the gas inlet was not found in or suggested by the art.

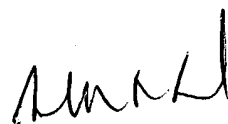
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
3/4/04